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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,264	04/02/2001	Steve J. Shattil		1606

7590 04/24/2007

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EXAMINER	
DEPPE, BETSY LEE	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/824,264	SHATTIL, STEVE J.	
	Examiner	Art Unit	
	Betsy L. Deppe	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-9,11-13,16 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9,11-13,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 21, 2006 has been entered.

Response to Arguments

2. Applicant's arguments filed December 21, 2006 have been fully considered. The arguments with respect to the rejection based on Cafarella are persuasive and the respective rejections of August 2, 2006 are withdrawn.

However, the arguments with respect to the rejection of the claims based on Whinnett et al., Weerackody and Hayashi are not persuasive.

3. In response to applicant's argument on page 8 that Whinnett et al. does not diversity encode before transmitting the signal, antenna selector 140 selects which antenna to use for transmission. Since the selection of the antenna affects/changes the path of the signal, it is "diversity encoding" the spread information signal thereby reading on the claimed invention.

4. In response to applicant's argument on page 8 that Weerackody "discloses diversity encoding only of the combined signal" wherein the applicant appears to be referring to the output of circuit 10 of Figure 4 as "the combined signal, it is unclear how this differs from the applicant's invention. Based on the Examiner's understanding of Figures 9D, 9E, 10D and 10E, the combined signal output of element 94 (corresponding to element 4 in Weerackody) is diversity encoded via a plurality of transmitters (i.e. antennas 99.1). These figures are inconsistent with the applicant's argument that the diversity encoding of the present invention "precedes the combining step."

Furthermore, dependent claims 5 and 11 recite "transmitting from a plurality of spatially separated transmitters" as "diversity encoding" which seems to suggest that the "diversity encoding" step does not have to occur before the "transmitting" step.

Therefore, the argument is not persuasive and the rejections of the claims as being anticipated by Weerackody are maintained.

5. In response to applicant's argument on page 9 that Hayashi only provides diversity encoding after the signals are coupled into the communication channel, the antenna selecting section 204 (and) switch connecting section (203) select which antenna to use for transmission. Since the selection of the antenna affects/changes the path of the signal, it is "diversity encoding" the spread information signal before it is actually transmitted or "coupled" into the wireless communication channel. Therefore the argument is not persuasive and the rejections of the claims as being anticipated by Hayashi are maintained.

Claim Objections

6. Claims 6 and 12 are objected to because of the following informalities: it appears that "and" on line 3 of the respective claims should be "or" (see page 16, lines 18-21) since "spread information signal" and "information-bearing wideband signal," respectively, corresponds to the output of modulator 94 in Figures 10A-10E. Since the output of modulator 94 includes the despreading signal provided by 92, it does not seem to make sense for both the output of modulator 94 ***and*** the output of 92 to be modulated onto the carrier as recited in the respective claims. Appropriate correction or clarification is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is vague and indefinite since the step of generating a signal comprises a step of duplicating the signal. How can a signal be duplicated before it is "generated"?

Claim Rejections - 35 USC § 102

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 1, 3 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Whinnett et al. (US Patent No. 6,317,411 B1 cited in the Office Action mailed February14, 2006).

11. With regard to claims 1 and 3, Figure 9 of Whinnett et al. discloses the claimed invention including generating a spread information signal (e.g. output of 92), generating a despreading signal (e.g. spreading code w_1w_1), and diversity encoding at least one of the spread information signal and the despreading signal wherein the step of diversity encoding includes transmitting from a plurality of spatially separated transmitters (e.g. 140, 100, 102, 104 and 106) wherein the spread information signal includes modulating at least one of a plurality of identical wideband signals with an information signal. Figure 9 also shows components 100/102/104/106 for coupling the spread information signal and the despreading signal into a wireless communication channel since it is inherent that the despreading signal is coupled to the channel via the spread information signal. (See also column 10, lines 8-16)

12. With regard to claim 6, Whinnett et al. discloses the claimed invention including modulating the spread information signal and the despreading signal onto a carrier signal since it is inherent/implicit that a signal is modulated onto a carrier signal for transmission in a wireless system.

13. Claims 1, 5, 6, 8, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Weerackody (US Patent No. 5,289,499 cited in the Office Action mailed June 8, 2005).

14. With regard to claims 1 and 5, Figure 4 of Weerackody discloses the claimed invention including generating a spread information signal (e.g. b(n) or the output of multiplier circuit 10), generating a despreading signal (12), and diversity encoding diversity-encoding at least one of the spread information signal and the despreading signal wherein the step of diversity encoding includes transmitting from a plurality of spatially separated transmitters (T_1). (See column 6, line 48 - column 7, line 1) Figure 4 also shows a transmission circuit (20) and an antenna (25) for coupling the spread information signal and the despreading signal (via the output signal of multiplier circuit 10) into a wireless communication channel.

15. With regard to claims 6 and 12, Figure 4 of Weerackody discloses the claimed invention including modulating the spread information signal and the despreading signal onto a carrier signal (e.g. via transmission circuit 20) since it is inherent/implicit that a signal is modulated onto a carrier signal for transmission in a wireless system.

16. With regard to claims 8 and 11, Figure 4 of Weerackody discloses the claimed invention including generating at least one information-bearing wideband signal (e.g. b(n) or 10), generating at least one decoding signal (12) and diversity encoding the information-bearing wideband signal wherein the step of diversity encoding includes transmitting from a plurality of spatially separated transmitters (T_1). Figure 4 also shows

a transmission circuit (20) and an antenna (25) for coupling the spread information signal and the despreading signal into a wireless communication channel.

17. Claims 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashi (US Patent No. 6,252,864 B1 cited in the Office Action mailed February14, 2006). Figure 3 of Hayashi discloses the claimed invention including a wideband signal generator configured to generate a plurality of wideband signals since it is implicit/inherent that there is a means for generating the spreading codes 11, 12, 21 and 22. Furthermore, Figure 3 of Hayashi discloses a modulator (e.g. 201) coupled to the wideband signal generator for generating a spread spectrum signal and a diversity processor (e.g. 203 and 204) configured for adjusting at least one diversity parameter (i.e. antenna diversity). (See column 4, lines 17-62) Figure 3 also shows a composing section (209) and an antenna (1) for coupling the spread information signal and the despreading signal into a wireless communication channel.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whinnett et al. or Weerackody as applied to claims 1 and 8, respectively above, and

further in view of Dabak et al. (US Patent No. 6,831,943 B1) Each of the respective references, as applied to claims 1 and 8, respectively, disclose the claimed invention except for the despreading signal including a noise signal.

Since Dabak et al. teaches that a pseudo-noise signal can be used as a spreading sequence (see column 5, lines 58-62), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a pseudo-noise signal as spreading sequence/code in either Whinnett et al. or Weerackody in order to facilitate implementation of the invention by using known or accepted types of spreading sequences such as pseudo-noise signals.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Betsy L. Deppe
Primary Examiner
Art Unit 2611